

**INFORMATION DISCLOSURE
CITATION IN AN
APPLICATION**



(PTO-1449)



ATTY. DOCKET NO.
113019.179US2

SERIAL NO.
09/829,073

APPLICANT
Ke-Wen DONG et al.

FILING DATE
April 9, 2001

GROUP
1641

U.S. PATENT DOCUMENTS

EXAMINER'S INITIALS	PATENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE
LC	4,554,101	11/19/85	Hopp			01/28/83
	5,272,071	12/21/93	Chappel			05/28/92
	5,626,846	05/06/97	Dean			05/30/95
	5,641,487	06/24/97	Dean			03/26/93
	5,641,670	06/24/97	Treco et al.			05/13/94
	5,672,488	09/30/97	Dean			05/30/95
	5,916,768	06/29/99	Dean			05/23/97
	5,710,038	01/20/98	Mes-Masson et al.			11/25/94
LC	5,869,053	02/09/99	Stern et al.			08/17/93

FOREIGN PATENT DOCUMENTS

EXAMINER'S INITIALS	PATENT NO.	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
						Yes	No

OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)

LC	Bleil, Jeffrey A. et al. 1980. "Structure and Function of the Zona Pellucida: Identification and Characterization of the Proteins of the Mouse Oocyte's Zona Pellucida." <i>Dev. Bio.</i> Vol. 76, pp. 185-202.
	Barbosa, James A. 1987. "Site-Directed Mutagenesis of Class I HLA Genes: Role of Glycosylation in Surface Expression and Functional Recognition." <i>J. Exp. Med.</i> Vol. 166, pp. 1329-50.
	Burkman, Lani J. et al. 1988. "The Hemizona Assay (HZA): Development of a Diagnostic Test for the Binding of Human Spermatozoa to the Human Hemizona Pullucida to Predict Fertilization Potential." <i>Fertility and Sterility</i> . Vol. 49, pp. 688-693.
	Kinloch, Ross A. et al. 1988. "Primary Structure of the Mouse Sperm Receptor Polypeptide Determined by Genomic Cloning." <i>Proc. Natl. Sci.</i> Vol. 85, pp. 6409-6413.
	Mansour, Suzanne L. 1988. "Disruption of the Proto-Oncogene Int-2 in Mouse Embryo-derived Stem Cells: A General Strategy for Targeting Mutations to Non-Selectable Genes. <i>Nature</i> . Vol. 336, pp. 348-349.
	Saling, Patricia. 1989. "Mammalian Sperm Interaction with Extracellular Matrices of the Egg." <i>Oxford Reviews of Reproductive Biology</i> . Vol. 11, pp. 339-388.
LC	Chamberlin et al. August 1990. "Human Homolog of the Mouse Sperm Receptor." <i>Proceedings of the National Academy of Sciences of USA</i> . Vol. 87, pp. 6014-6018, XP-00210857.

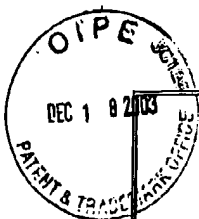
EXAMINER

Chen. X Cook

DATE CONSIDERED

4/15/04

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.



SHEET 2 OF 6

INFORMATION DISCLOSURE
CITATION IN AN
APPLICATION

(PTO-1449)

ATTY. DOCKET NO.
113019.179US2SERIAL NO.
09/829,073APPLICANT
Ke-Wen DONG et al.FILING DATE
April 9, 2001GROUP
1641

U.S. PATENT DOCUMENTS

EXAMINER'S INITIALS	PATENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE

FOREIGN PATENT DOCUMENTS

EXAMINER'S INITIALS	PATENT NO.	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
						Yes	No

OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)

WC	Saling, Patricia. 1991. "How the Egg Regulates Sperm Function During Gamete Interaction: Facts and Fantasies." <i>Biology of Reproduction</i> . Vol. 44, pp. 246-251.
	Beebe, Stephen J. et al. 1992. "Recombinant Mouse ZP3 Inhibits Sperm Binding and Induces the Acrosome Reaction." <i>Dev. Biol.</i> Vol 151, pp. 48-54.
	Oehninger, S. et al. 1992. "Hermizona Assay and Its Impact on the Identification and Treatment of Human Sperm Dysfunctions." <i>Andrologia</i> . Vol. 24, pp. 307-321.
	Kinloch et al. January 1995. "Mapping the Mouse ZP3 Combining Site for Sperm by Exon Swapping and Site-Directed Mutagenesis." <i>Proceedings of the National Academy of Sciences of USA</i> . Vol. 92, pp. 263-267, XP-002108572.
	Clark et al. 1996. "Role for Glycoconjugates in Cellular Communication in the Human Reproductive System." <i>Molecular Human Reproduction</i> . Vol. 2, No. 7, pp. 513-517.
	Clark, Gary F. et al. 1996. "A Role for Glycoconjugates in Human Development: The Human Feto-embryonic Defense System Hypothesis." <i>Human Reproduction</i> . Vol. 11, pp. 467-473.
	Bagavant et al. March 1997. "Immunogenicity and Contraceptive Potential of a Zona Pellucida 3 Peptide Vaccine." <i>Biology of Reproduction</i> . Vol. 56, No. 3, pp. 764-770, XP-002108575.
	Chapman et al. 1997. "2. Sperm-zona Interaction and Recombinant DNA Technology." <i>Molecular Human Reproduction</i> . Vol. 3, No. 8, pp. 646-650.
	Hansen et al. 1997. "O-GLYCBASE Version 2.0: a Revised Database of O-glycosylated Proteins." <i>Nucleic Acids Research</i> . Vol. 25, No. 1, pp. 178-282.
	Patankar et al. 1997. "Expression of Glycans Linked to Natural Killer Cell Inhibition of the Human Zona Pellucida." <i>Molecular Human Reproduction</i> . Vol. 3, No. 6, pp. 501-505.
	Chen et al. May 1998. "Inactivation of the Mouse Sperm Receptor, mZP3, by Site-directed Mutagenesis of Individual Serine Residues Located at the Combining Site for Sperm." <i>Proc. Natl. Acad. Sci. USA</i> . Vol. 95, pp. 6193-6197.
WC	Hansen et al. 1998. "NetOglyc: Prediction of Mucin Type O-glycosylation Sites Based on Sequence Context and Surface Accessibility." <i>Glycoconjugate Journal</i> . pp. 115-130.
EXAMINER	DATE CONSIDERED
Asia. K Cook	4/15/04

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

INFORMATION DISCLOSURE
CITATION IN AN
APPLICATION



(PTO-1449)

ATTY. DOCKET NO.
113019.179US2

SERIAL NO.
09/829,073

APPLICANT
Ke-Wen DONG et al.

FILING DATE
April 9, 2001

GROUP
1641

U.S. PATENT DOCUMENTS

EXAMINER'S INITIALS	PATENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE

FOREIGN PATENT DOCUMENTS

EXAMINER'S INITIALS	PATENT NO.	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
						Yes	No

OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)

LWC	Chirgwin, John M., Alan E. Przybyla, Raymond J. MacDonald, and William J. Rutter. 1979. "Isolation of Biologically Active Ribonucleic Acid from Sources Enriched in Ribonuclease." <i>Biochemistry</i> . Vol. 18, No. 24, pp. 5294-5299.
	Bleil, Jeffrey D. and Paul M. Wassarman. July 1980. "Mammalian Sperm-Egg Interaction: Identification of a Glycoprotein in Mouse Egg Zonae Pellucidae Possessing Receptor Activity for Sperm." <i>Cell</i> . Vol. 20, pp. 873-882.
	Dunbar, Bonnie S., Cecilia Liu, and David W. Sammons. 1981. "Identification of the Three Major Proteins of Porcine and Rabbit Zonae Pellucidae by High Resolution Two-Dimensional Gel Electrophoresis: Comparison with Serum, Follicular Fluid, and Ovarian Cell Proteins." <i>Biology of Reproduction</i> . Vol. 24, pp. 1111-1124.
	McIlhinney, R. A. J. and Shashikant Patel. March 1983. "Characterization of the Fibronectin Synthesized by Human Germ Cell Tumors." <i>Cancer Research</i> . Vol. 43, pp. 1282-1288.
	Florman, Harvey M. and Paul M. Wassarman. May 1985. "O-Linked Oligosaccharides of Mouse Egg ZP3 Account for Its Sperm Receptor Activity." <i>Cell</i> . Vol. 41, pp. 313-324.
	Fukuda, Michiko N., Anne Dell, Jane E. Oates, and Minoru Fukuda. June 1985. "Embryonal Lactosaminoglycan: The Structure of Branched Lactosaminoglycans with Novel Disialosyl (Sialyl alpha2-9 Sialyl) Terminals Isolated from PA1 Human Embryonal Carcinoma Cells." <i>The Journal of Biological Chemistry</i> . Vol. 260, No. 11, pp. 6623-6631.
	Cross, Nicholas L., Patricio Morales, James W. Overstreet, and Frederick W. Hanson. May 1986. "Two Simple Methods for Detecting Acrosome-Reacted Human Sperm." <i>Gamete Research</i> . Vol. 15, pp. 213-226.
	Ringuette, Maurice J., Donna A. Sobieski, Steven M. Chamow, and Jurrien Dean. June 1986. "Oocyte-Specific Gene Expression: Molecular Characterization of a cDNA Coding for ZP-3, the Sperm Receptor of the Mouse Zona Pellucida." <i>Proc. Natl. Acad. Sci. USA</i> . Vol. 83, pp. 4341-4345.
LWC	Burkman, Lani J., Charles C. Coddington, Daniel R. Franken, Thinus F. Kruger, Zev Rosenwaks, and Gary D. Hodgen. April 1988. "The Hemizona Assay (HZA): Development of a Diagnostic Test for the Binding of Human Spermatozoa to the Human Hemizona Pellucida to Predict Fertilization Potential." <i>Fertility and Sterility</i> . Vol. 49, No. 4, pp. 688-697.

EXAMINER

Oliver J. Cook

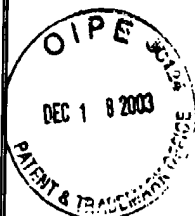
DATE CONSIDERED

4/15/04

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

INFORMATION DISCLOSURE CITATION IN AN APPLICATION

(PTO-1449)

ATTY. DOCKET NO.
113019.179US2SERIAL NO.
09/829,073APPLICANT
Ke-Wen DONG et al.FILING DATE
April 9, 2001GROUP
1641

U.S. PATENT DOCUMENTS

EXAMINER'S INITIALS	PATENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE

FOREIGN PATENT DOCUMENTS

EXAMINER'S INITIALS	PATENT NO.	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
						Yes	No

OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)

4/2	Shabanowitz, R. B. and M. G. O'Rand. 1988. "Characterization of the Human Zona Pellucida from Fertilized and Unfertilized Eggs." <i>J. Reprod. Fert.</i> Vol. 82, pp. 151-161.
	Timmons, T. M. and B. S. Dunbar. 1988. "Antigens of Mammalian Zona Pellucida." <i>Perspectives in Immunoreproduction: Conception and Contraception</i> . New York: Hemisphere Publishing Co. pp. 242-260.
	Wassarman, Paul M. 1988. "Zona Pellucida Glycoproteins." <i>Ann. Rev. Biochem.</i> Vol. 57, pp. 415-442.
	Saling, Patricia M. 1989. "Mammalian Sperm Interaction with Extracellular Matrices of the Egg." <i>Oxf. Rev. Reprod. Biol.</i> Vol. 11, pp. 339-388.
	Sambrook, J., E.F. Fritsch, and T. Maniatis. 1989. <i>Molecular Cloning: A Laboratory Manual</i> . 2 nd Edition. Cold Spring Harbor Laboratory Press. pp. 16.32-16.37.
	Oehninger, Sergio, Anibal Acosta, and Gary D. Hodgen. January 1990. "Antagonistic and Agonistic Properties of Saccharide Moieties in the Hemizona Assay." <i>Fertility and Sterility</i> . Vol. 53, No. 1, pp. 143-149.
	Furukawa, Tatsuhiko, Masayuki Ozawa, Ruo-Pan Huang, and Takashi Muramatsu. March 1990. "A Heparin Binding Protein Whose Expression Increases During Differentiation of Embryonal Carcinoma Cells to Parietal Endoderm Cells: cDNA Cloning and Sequence Analysis." <i>J. Biochem.</i> Vol. 108, No. 2, pp. 297-302.
	Liang, Li-Fang, Steven M. Chamow, and Jurrien Dean. April 1990. "Oocyte-Specific Expression of Mouse Zp-2: Developmental Regulation of the Zona Pellucida Genes." <i>Molecular and Cellular Biology</i> . Vol. 10, No. 4, pp. 1507-1515.
	Kinloch, Ross A., Betina Ruiz-Seiler, and Paul M. Wassarman. August 1990. "Genomic Organization and Polypeptide Primary Structure of Zona Pellucida Glycoprotein hZP3, the Hamster Sperm Receptor." <i>Developmental Biology</i> . Vol. 142, pp. 414-421.
	Wassarman, Paul M. 1990. "Profile of a Mammalian Sperm Receptor." <i>Development</i> . Vol. 108, pp. 1-17.
	Wassarman, P. M. 1990. "Regulation of Mammalian Fertilization by Zona Pellucida Glycoproteins." <i>J. Reprod. Fert., Suppl.</i> Vol. 42, pp. 79-87.
LVC	1991. "Errata." <i>Developmental Biology</i> . Vol. 145, pp. 203-204.

EXAMINER

Chen. K. Cook

DATE CONSIDERED

4/15/04

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

**INFORMATION DISCLOSURE
CITATION IN AN
APPLICATION**



(PTO-1449)

 ATTY. DOCKET NO.
113019.179US2

 SERIAL NO.
09/829,073

 APPLICANT
Ke-Wen DONG et al.

 FILING DATE
April 9, 2001

 GROUP
1641

U.S. PATENT DOCUMENTS

EXAMINER'S INITIALS	PATENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE

FOREIGN PATENT DOCUMENTS

EXAMINER'S INITIALS	PATENT NO.	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
						Yes	No

OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)


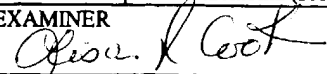
L/C	Saling, Patricia M. 1991. "How the Egg Regulates Sperm Function During Gamete Interaction: Facts and Fantasies." <i>Biology of Reproduction</i> . Vol. 44, pp. 246-251.
	Beebe, Stephen J., Lisette Leyton, Deborah Burks, Motoharu Ishikawa, Tom Fuerst, Jurrien Dean, and Patricia Saling. January 1992. "Recombinant Mouse ZP3 Inhibits Sperm Binding and Induces the Acrosome Reaction." <i>Developmental Biology</i> . Vol. 151, pp. 48-54.
	Thillai-Koothan, P., Marcel Van Diun, and R. John Aitken. May 1993. "Cloning, Sequencing and Oocyte-Specific Expression of the Marmoset Sperm Receptor Protein, ZP3." <i>Zygote</i> . Vol. 1, pp. 93-101.
	Lee, Vaughan H., Eric Schwoebel, Sarvamangala Prasad, Peter Cheung, Therese M. Timmons, Richard Cook, and Bonnie S. Dunbar. June 1993. "Identification and Structural Characterization of the 75-kDa Rabbit Zona Pellucida Protein." <i>The Journal of Biological Chemistry</i> . Vol. 268, No 17, pp. 12412-12417.
	Liang, Li-Fang and Jurrien Dean. 1993. "Conservation of Mammalian Secondary Sperm Receptor Genes Enables the Promoter of the Human Gene to Function in Mouse Oocytes." <i>Developmental Biology</i> . Vol. 156, pp. 399-408.
	Varki, Ajit. 1993. "Biological Roles of Oligosaccharides: All of the Theories Are Correct." <i>Glycobiology</i> . Vol. 3, No. 2, pp. 97-130.
	Barratt, C.L.R., A. Whitmarsh, D.P. Hornby, S. Clements, I.D. Cooke, and H.D.M. Moore. 1994. "Glycosylation of Human Recombinant ZP3 Is Necessary to Induce the Human Acrosome Reaction" (Abstract No. 33). <i>Hum. Reprod.</i> Vol. 9 (Suppl.).
	Dunbar, B. S., S. Avery, V. Lee, S. Prasad, D. Schwahn, E. Schwoebel, S. Skinner, and B. Wilkins. 1994. "The Mammalian Zona Pellucida: Its Biochemistry, Immunochimistry, Molecular Biology, and Development Expression." <i>Reprod. Fertil. Dev.</i> Vol. 6, pp. 331-347.
	Hinsch, Klaus-Dieter, Elvira Hinsch, Burkhard Meinecke, Edda Töpfer-Petersen, Susanne Pfisterer, and Wolf-Bernhard Schill. 1994. "Identification of Mouse ZP3 Protein in Mammalian Oocytes with Antisera Against Synthetic ZP3 Peptides." <i>Biology of Reproduction</i> . Vol. 51, pp. 193-204.
	Varki, Ajit. 1994. "[2] Metabolic Radiolabeling of Glycoconjugates." <i>Methods in Enzymology</i> . Vol. 230, pp. 16-32.
L/C	Oehninger, Sergio, Charles C. Coddington, Gary D. Hodgen, and Markku Seppala. February 1995. "Factors Affecting Fertilization: Endometrial Placental Protein 14 Reduces the Capacity of Human Spermatozoa to Bind to the Human Zona Pellucida." <i>Fertility and Sterility</i> . Vol. 63, No. 2, pp. 377-383.

EXAMINER

DATE CONSIDERED

4/15/04

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

INFORMATION DISCLOSURE CITATION IN AN APPLICATION  (PTO-1449)				ATTY. DOCKET NO. 113019.179US2	SERIAL NO. 09/829,073	
APPLICANT Ke-Wen DONG et al.						
FILING DATE April 9, 2001			GROUP 1641			
U.S. PATENT DOCUMENTS						
EXAMINER'S INITIALS	PATENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE
FOREIGN PATENT DOCUMENTS						
EXAMINER'S INITIALS	PATENT NO.	DATE	COUNTRY	CLASS	SUBCLASS	Translation Yes No
OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)						
LVC	Burks, D. J., R. Carballada, H. D. M. Moore, and P. M. Saling. July 1995. "Interaction of a Tyrosine Kinase from Human Sperm with the Zona Pellucida at Fertilization." <i>Science</i> . Vol. 269, pp. 83-86.					
	Barratt, Christopher L.R. and David P. Hornby. "Induction of the Human Acrosome Reaction by rhuZP3." 1995. <i>Human Sperm Acrosome Reaction</i> . Colloque INSERM/John Libbey Eurotext Ltd. Vol. 236, pp. 105-122.					
	Lust, J.A., D.F. Jelinek, K.A. Donovan, L.A. Frederick, B.K. Huntley, J.K. Braaten, and N.J. Maihle. 1995. "Sequence, Expression and Function of an mRNA Encoding a Soluble Form of the Human Interleukin-6 Receptor (sIL-6R)." <i>Curr. Top. Microbiol. Immunol.</i> Vol. 194, pp. 199-206.					
	Whitmarsh, A.J., M.J. Woolnough, H.D.M. Moore, D.P. Hornby, and C.L.R. Barratt. 1996. "Biological Activity of Recombinant Human ZP3 Produced in vitro: Potential for a Sperm Function Test." <i>Molecular Human Reproduction</i> . Vol. 2, No. 12, pp. 911-919.					
	Franken, Daniel R., Patricio J. Morales, and Ursula F. Habenicht. December 1996. "Inhibition of G Protein in Human Sperm and Its Influence on Acrosome Reaction and Zona Pellucida Binding." <i>Fertility and Sterility</i> . Vol. 66, No. 6, pp. 1009-1011.					
	Brewis, I.A., R. Clayton, C.L.R. Barratt, D.P.J. Hornby, and H.D.M. Moore. 1996. "Recombinant Human Zona Pellucida Glycoprotein 3 Induces Calcium Influx and Acrosome Reaction in Human Spermatozoa." <i>Molecular Human Reproduction</i> . Vol. 2, No. 8, pp. 583-589.					
	Chapman, Neil R. and Christopher L.R. Barratt. 1996. "The Role of Carbohydrate in Sperm-ZP3 Adhesion." <i>Molecular Human Reproduction</i> . Vol. 2, No. 10, pp. 767-774.					
	Prasad, Sarvamangala V., Brendan Wilkins, Sheri M. Skinner, and Bonnie S. Dunbar. 1996. "Evaluating Zona Pellucida Structure and Function Using Antibodies to Rabbit 55 kDa ZP Protein Expressed in Baculovirus Expression System." <i>Molecular Reproduction and Development</i> . Vol. 43, pp. 519-529.					
LVC	Dong, Ke Wen, Ting Fung Chi, Yu Wen Juan, Chih Wei Chen, Zhiyong Lin, Xiao-Qin Xiang, Mary Mahony, William E. Gibbons, and Sergio Oehninger. April 2001. "Characterization of the Biologic Activities of a Recombinant Human Zona Pellucida Protein 3 Expressed in Human Ovarian Teratocarcinoma (PA-1) Cells." <i>Am. J. Obstet. Gynecol.</i> pp. 835-844..					
EXAMINER 				DATE CONSIDERED 4/15/04		

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.